

**REMARKS**

1. Applicant thanks the Examiner for the Examiner's comments, which have greatly assisted Applicant in responding.
2. 35 U.S.C. §103(a). The Examiner has rejected Claims 1-23 as being unpatentable over Gopinathan *et al* 5,819,226 (Gopinathan) in view of Sheppard 6,026,397.

Applicant respectfully disagrees.

**Claim 1**

Claim 1 appears as follows (emphasis added):

1. (original) A computer implemented method of processing a transaction to determine the risk of transaction, the method comprising:
  - storing a plurality of merchant clusters, the merchant clusters determined from statistical co-occurrences of the merchant names in a plurality of transactions;
  - receiving data from a transaction between a consumer and merchant;
  - determining one of the plurality of merchant clusters associated with the merchant of the transaction based on the merchant's name; and
  - applying the merchant cluster in conjunction with data derived from the transaction to a predictive model to determine a level of risk of the transaction.

The Examiner stated that Gopinathan fails to show a plurality of merchant clusters are determined by statistical occurrences (should be co-occurrences) of the merchant names in transactions.

The Examiner further states that Sheppard ('397) shows converting data/high categorical data like words, names, etc. (and cites col. 1, lines 39-54) such as merchant names into clusters (and cites element 36) that included lookup tables where each

name/data entry is unique (and cites claim 4) and derived from raw merchant names/raw data (and cites element 34 and col. 2, lines 1-10; claim 5) is vital to the predictive model (and cites element 38) and creating a factor (affinity) from the clustering to be used in the model (and cites claim 6 and 15-17).

Col. 1, lines 39-54 appears as follows (emphasis added):

One aspect of the present invention provides a system for analyzing a data file containing a plurality of data records with each data record containing a plurality of parameters. The system includes an input for receiving the data file and a data processor having at least one of several data processing functions. These data processing functions include, for example, a segmentation function for segmenting the data records into a plurality of segments based on the parameters. The data processing functions also include a clustering function for clustering the data records into a plurality of clusters containing data records having similar parameters. The clustering function can also generate cluster maps depicting the number of records in each cluster. A prediction function for predicting expected future results from the parameters in the data records may also be provided with the data processing function.

Nowhere in the above is Sheppard showing converting data/high categorical data like words, names, etc. Applicant is of the opinion that the Examiner is improperly using the claimed invention and improper hindsight to infer what is in the prior art of reference. The prior art of reference is based only on parameters. It is improper to project the assumption that parameters includes merchant names without support.

The Examiner cited element 36 for such as merchant names into clusters. Element 36 is neural clustering. Nowhere does it show merchant names into clusters. Again, it is improper to assume all neural clustering includes merchant names without proper support.

The Examiner cited that included lookup tables where each name/data entry is unique and cited claim 4. Claim 4 appears as follows (emphasis added):

4. The system of claim 2 wherein the data records in the data file are in ASCII format and are processed in binary format in the data processor.

2. The system of claim 1 wherein the input is further operable to convert the data records into a processing format for the data processor.

1. A system for analyzing a data file containing a plurality of data records, each data record containing a plurality of parameters, the system comprising:  
an input for receiving the data file; and

a data processor comprising a clustering function for clustering the data records into a plurality of clusters containing data records having similar parameters wherein the clustering function is further operable to generate a cluster map including a graphical depiction of the clusters, wherein the cluster map comprises a plurality of graphical elements each having a graphical depiction indicative of a number of records in a cluster.

Nowhere in the above is Sheppard teaching shows converting data/high categorical data like words, names, etc. such as merchant names into clusters that included lookup tables where each name/data entry is unique. Applicant does not see any nexus between the claimed invention and the Sheppard disclosure. Applicant respectfully requests that if the Applicant is mistaken, could the Examiner please clarify.

Regarding and derived from raw merchant names/raw data, Element 34 is a rule based segmentation component. Col. 2, lines 1-10 appears as follows (emphasis added):

Yet another aspect of the present invention provides a method for analyzing a data file containing a plurality of data records, each data record containing a plurality of parameters. The method further includes the steps of inputting the data file and processing the data file. Processing the data file includes at least one of segmenting the data records into a plurality of segments based on the parameters, clustering the data records into a plurality of clusters containing data records having similar parameters, and predicting expected future results from the parameters in the data records.

Again, nowhere does Sheppard disclose or teach and derived from raw merchant names/raw data. To infer that Sheppard is teaching merchant names without support is improper use of using the invention as prior knowledge.

In stark contrast, in the Specification, on page 2, lines 3 through 16 states as follows (emphasis added):

Various solutions have been applied to the problem with the most successful solutions being those based on statistical models developed from the transactional pattern of legitimate and fraudulent use of credit cards. The HNC Falcon solution is an example of this approach (see e.g., U.S. Pat. No. 5,819,226). Traditionally, only information that can be gleaned from the numerical and low-categorical information of the transaction stream (information such as transaction amount, location, industry-code of the merchant, time and date, etc.), has been usable by statistical methods.

The textual information available in credit card transactions is typically a character string describing the merchant (commonly appearing in a standard monthly billing statement). Typical text descriptors contain the merchant name, store number, city, state, and ZIP code. The latter three fields are redundant, since these data are also coded in geographical and postal data fields. However, the merchant name offers unique information. This type of textual information has not been previously used in statistical models due to the extremely high dimensionality of text data and the consequent difficulty of transforming textual data into useful predictors of fraud. However, human fraud control experts recognize this information as being highly valuable.

Sheppard's Claim 5 appears as follows:

5. The system of claim 1 further comprising a data manager for manipulating the data file.

Again, nowhere does Sheppard teach converting data/high categorical data like words, names, etc. such as merchant names into clusters that included lookup tables where each name/data entry is unique and derived from raw merchant names/raw data. To infer as such is improper.

Sheppard's Claim 6 and 15-17 appears as follows:

6. The system of claim 5 wherein the data manager further comprises a data append function for appending data files.

15. The system of claim 1 wherein the data processor further comprises a segmentation function for segmenting the data records into a plurality of segments based on the parameters.

16. The system of claim 15 wherein the segmentation function is further operable to provide statistics on the data records.

17. The system of claim 15 wherein the segmentation function is further operable to segment the data records into a plurality of segments using segmentation logic.

Again, nowhere does Sheppard teach or suggest **creating a factor (affinity) from the clustering to be used in the model**. What model?

Finally, the Examiner stated that Sheppard teaches the motivation to include merchant names in clustering and segmenting to create data to supplement a predictive model in order to gain greater clarity over the SIC factors that Gopinathan discloses and cites Col. 20, line 44. Col. 20, line 44 appears as follows:

For customer databases, this behavior may include product preference, customer profitability, credit risk, and likelihood of fraud.

Nowhere in the above is Sheppard motivating **including merchant names in clustering**.

Applicant respectfully brings to the Examiner's attention that the CAFC has held, in re Zurko, CAFC 96-1258 (Serial No. 07/479,666), (15 April 1997) that Board of Appeals impermissibly used hindsight to arrive at the claimed invention, citing W.L. Gore and Associates v. Garlock, Inc., id. at pp. 312-13 (Fed. Cir. 1983) as follows:

To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is

to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

Further, it was held in *In re Fritch*, 972 F.2d 1260, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992):

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." (quoting *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984))....The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

And also held in *In re Fritch*, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992):

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)).

In view of the above, Applicant is of the opinion that neither Gopinathan nor Sheppard teach all the limitations of the independent claims of the claimed invention nor render the claimed invention obvious. Therefore, in view of the above, Applicant is of the opinion that Claims 1-23 overcome the Examiner's rejections. Hence, Applicant is of the opinion that Claims 1-23 are in condition for allowance. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection under 35 U.S.C. §103(a).

### CONCLUSION

Based on the foregoing, Applicant considers the present invention to be distinguished from the art of record. Accordingly, Applicant earnestly solicits the Examiner's withdrawal of the rejections raised in the above referenced Office Action, such that a Notice of Allowance is forwarded to Applicant, and the present application is therefore allowed to issue as a United States patent. The Examiner is invited to call to discuss the response. The Commissioner is hereby authorized to charge any additional fees due or credit any overpayment to Deposit Account No. 07-1445.

Respectfully Submitted,



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